Serial No.: 09/858,098
Group Art Unit: 2633
Examiner: Hung Nhat Ngo

Amendment to the Claims

1 (Currently Amended). A communications network comprising:

a pair of network elements;

two or more working fibers ~~spans~~ coupled between said pair of network elements for carrying communications traffic between said pair of network elements, each working fiber ~~spans~~ carrying said communications traffic over a plurality of channels associated with one or more rings;

a shared protection fiber ~~span~~ coupled between said network elements, said shared protection fiber ~~span~~ providing a plurality of channels in excess of the number of channels of one or more of the working fibers ~~spans~~;

wherein said network elements include circuitry for concurrently switching communication traffic on rings associated with different working fibers ~~spans~~ to respective channels of said shared protection fiber ~~span~~.

2 (Currently Amended). The communications network of claim 1 wherein said shared protection fiber ~~span~~ provides a plurality of channels in excess of the number of channels of any of the one or more working spans.

3 (Currently Amended). The communications network of claim 1 wherein at least one of said working fibers ~~spans~~ carries traffic for multiple ring structures.

4 (Original). The communications network of claim 1 wherein said pair of network elements each includes a non-blocking optical matrix.

5 (Currently Amended). The communications network of claim 4 wherein each of said pair of network elements is coupled to two or more incoming working fibers ~~spans~~ and two or more corresponding incoming protection fibers ~~spans~~.

6 (Currently Amended). The communications network of claim 5 wherein each of said pair of network elements includes control circuitry for switching a channel from each of said incoming protection fibers ~~spans~~ to an available channel of said shared protection fiber ~~span~~.

7 (Currently Amended). The communications network of claim 6 wherein said control circuitry further is operable to switch a channel from each of said incoming working fibers ~~spans~~ to said shared protection fiber ~~span~~.

8 (Currently Amended). The communications network of claim 5 wherein each of said pair of network elements includes control circuitry for switching a channel from said shared protection span to a channel on an outgoing protection fiber ~~span~~.

9 (Currently Amended). A network element comprising:

interface circuitry for coupling to two or more incoming working fibers ~~spans~~ and two or more respective incoming protection fibers ~~spans~~, each of said working fibers ~~spans~~ operable to carry communications traffic over a plurality of channels associated with one or more rings; and

switching circuitry for concurrently coupling channels from different incoming protection fibers ~~spans~~ to a shared protection fiber ~~span~~, said shared protection fiber ~~span~~ providing a plurality of channels in excess of the number of channels of one or more of the working fibers ~~spans~~.

10 (Currently Amended). The communications network of claim 1 wherein shared protection fiber ~~span~~ provides a plurality of channels in excess of the number of channels of any of the one or more working fibers ~~spans~~.

11 (Currently Amended). The network element of claim 9 wherein said switching circuitry includes control circuitry for selective switching a channel from an incoming protection fiber ~~span~~ to an available channel on said shared protection fiber ~~span~~ responsive to control information.

12 (Original). The network element of claim 11 wherein said switching circuitry further includes a non-blocking optical matrix.

13 (Original). The network element of claim 9 wherein said interface circuitry includes a channel demultiplexer.

14 (Original). The network element of claim 13 wherein said interface circuitry further includes a channel multiplexer.

15 (Original). The network element of claim 14 wherein said interface circuitry includes input/output shelves coupled to said demultiplexer and said multiplexer.